Transport planning in sub-Saharan Africa

1. Improving access to markets and services

Introduction

Much academic research on transport planning in sub-Saharan Africa has concentrated on rather narrow technical engineering issues and upon roads *per se*. To be beneficial to a wide sector of the continent's population, transport planning also requires a detailed understanding of the economic, social and political environments in which transport takes place and interventions are made. In this set of progress reports on transport planning in Africa I have picked out some of the principal themes - and gaps - in recent transport research from a social science perspective, with a particular emphasis on socio-economic, cultural and political issues. The first report looks broadly at current transport needs and the prospects for improving transport services: the discussion is restricted to road transport due to limitations of space. The second report concentrates on gender and transport issues, while the third reviews the challenges of meeting children's transport needs.

Roads are not enough

A good transport system depends not just on suitable path and road infrastructure but also on the availability of appropriate vehicles at the right time and place (Dawson and Barwell 1993; Ellis and Hine 1998). Bringing these elements together remains a major challenge across much of Africa. Low population density compounded by very low economic density (GDP per km squared) results in high cost infrastructure investments and transport costs for intra-Africa trade, which are estimated to be nearly twice those of other developing regions (World Bank 2005:37). Poor access not only affects trading costs: it is closely linked to diverse aspects of poverty and social exclusion (Edmonds 1998, Booth et al. 2000). The specific problems of remote and off-road rural areas and the linkages between poverty and remoteness/difficult access have been emphasised in a number of recent studies (Porter 1997, 2002a, 2002b, Bird et al. 2002, Stifel et al. 2003, Christiaenson et al. 2003). By comparison, there has been surprisingly little research on the mobility problems of Africa's urban poor (Bryceson et al. 2003:6, Sohail et al. 2003): an important research gap.

The high cost of paved *road construction* tends to limit most major road interventions to the public sector, in Africa as elsewhere. Ministries of transport across Africa are staffed predominantly by civil engineers whose training and expertise is focussed principally on road construction and maintenance. Moreover, politics, corruption and the mystique of the paved road continue to encourage a roads focus in national transport strategies. Decisions regarding which roads to improve or pave may often be more dependent upon political factors than agricultural or other economic potential along the proposed route.

Good all-season road access linking rural areas with major urban market centres is crucial for encouraging food production for urban markets, for enabling rural populations access to the hospitals, secondary schools, banks, government departments, NGOs and other higher-level goods and services that are commonly concentrated in such centres, and for allowing urban-based health professionals, traders, bureaucrats, politicians, extension workers, NGO staff and others easy access to the rural areas they are expected to serve. Across most of Africa the deficiencies

in the all-season road network in rural areas are a major constraint on urban-rural linkages. Transport failure associated with poor access is probably the most significant factor limiting agricultural producer profits from food marketing, with consequent massive implications for income distribution and efforts at poverty alleviation (Christiansen et al. 2003).

Nigeria provides ample illustration of the roads problem. Despite massive expansion of its inter-urban paved road system during the 1970s and early 1980s oil boom, inadequate construction quality (corrupt road contractors) and failure to maintain roads soon led to severe deterioration (Filani 1993). Recent studies, commissioned by the Nigerian Ministry of Agriculture and Rural Development, illustrate the scale of current rural access problems and the linkages between poor road access and poverty (e.g. Unilag Consult 2001, Transport Studies Unit 2001, Uza et al. 2001). Many African countries arguably face even more intractable problems. For example, access to good roads is always one of, and frequently *the*, major cited constraint on crop marketing in Zambia in recent reports (e.g. Republic of Zambia 2001: 14, World Bank 2002: 63).

There has been an increasing emphasis among donors on the role that communities should themselves play in feeder road maintenance and improvement in Africa. Labour-based methods which offer local employment have been promoted for some years (Larcher 1998, Rogerson 2000, TRL 2003). Malmberg-Calvo (1998) emphasises the need to develop an institutional framework for managing and financing the lowest level of the road/path network. She stresses the importance of stakeholder involvement and a redefined public-private partnership, whereby local governments or their agents manage the core roads and communities and farmers' associations choose which roads to 'own' and take responsibility for. However, defining ownership is likely to be crucial as a precursor to new initiatives in this field and the process may be time-consuming.

T*ransport services* are mostly provided by a myriad of small operators in the private sector across Africa. Services tend to be least satisfactory in areas with low populations, traditional agriculture with little paid employment, undeveloped markets and poor infrastructure: here transport tends to be expensive, crowded and unsafe with little diversity of modes, little competition and no 'critical mass' to make it easy to buy and maintain vehicles (Starkey et al. 2001:10-11). Zambia's eastern and northern provinces provide a good example of the issues such low population density areas face. Distances to market centres reportedly average 40 kms and independent transport is hard to come by since large companies dominate agricultural marketing and send their own trucks to collect produce (Ellis and Hine 1998: 34). This takes away work from local transporters and contributes to a vicious circle of low demand, and infrequent but expensive transport services. Nijhoff et al (2003: 19-20) note the need for public sector support to transport in smallholder areas in Zambia in the form of help with access to imported spare parts and capital equipment. The potential role for interventions of this type needs closer examination.

Access to fuel at an affordable price is a crucial factor in transportation and politically very sensitive. Fuel costs commonly account for 10-40% of overall vehicle operating costs (Starkey et al. 2001: 37) and thus price increases are a common cause of public protest. High fuel taxes are a common cause of high vehicle operating costs (see

Benmaamar 2002 re Uganda Farrington and Saasa 2002: vi re Zambia, where fuel taxation accounted for approximately 70% of the pump price). In Africa's many non-oil producing countries, fuel conservation is an important issue: this suggests the value of increased use of non-motorised transport, discussed below.

Transport planning approaches

There has been growing interest in the development of a more integrated local-level approach to *rural transport planning* in Africa over the last two decades. The evidence accumulated from a series of individual studies conducted over the 1980s and early 90s in Africa and Asia (mostly supported by the ILO or the World Bank's Sub-Saharan Africa Transport Policy Program (SSATP)), has emphasised the need for a more joined-up approach which focuses on access through an examination of mobility and proximity conditions rather than transport per se. This has encouraged the development of tools known as Accessibility Planning (AP) or Integrated Rural Accessibility Planning (IRAP) which offer a means of identifying accessibility problems among rural households and prioritising interventions i.e. a combination of transport planning with broader rural planning (Edmonds 1998, Sarkar and Ghosh 2000). However, there are always dangers that over-dependence on a formulaic approach, without adequate attention to less easily quantifiable data, can reduce the value of such exercises.

Other recent efforts aimed at a more holistic approach to mobility have drawn on the Sustainable Livelihoods Approach. Bryceson et al. (2003) use this framework to provide evidence regarding social and economic benefits and disbenefits of mobility, with particular reference to rural-urban linkages, while Sohail et al. (2003) use it to examine access to public transport in three urban contexts, including one in Africa (Dar es Salaam). Bryceson et al. (2003) provide evidence from detailed household surveys of different settlement types in Zimbabwe and Uganda to show how mobility varies with income. This study emphasises that poor people rely far less on motorised transport than medium and high income groups, and suggests the need to strengthen non-motorised forms of transport that the poor can afford. It also draws attention to the role that transport provision plays as a form of employment for the poor. This labour-absorption point also emerges strongly in a series of recent market access case studies in Nigeria (Nigerian Marketing Network, 2005) and from recent country case studies of transport policy (World Bank 2003).

A greater role for Intermediate Means of Transport (IMTs)?

IMTs are 'local transport solutions that increase transport capacity and reduce drudgery at a relatively low capital cost' (Starkey 2001:vii). They are intermediate in the sense of filling the gap between human walking, headloading and large-scale transport, not merely equipment at an intermediate stage of technical evolution (ibid). IMTs of various types can facilitate transport of small to medium loads and/or personal travel along poor/narrow tracks. These attributes are potentially of massive significance for both intra- and inter-village trip-making.

Although donors have recognised the potential of IMTs such as bicycles, wheel-barrow water carriers, ox-carts and suchlike in sub-Saharan Africa since the late 1980s, only recently has this resulted in more concerted programmes of research and development (Starkey 2001, White et al. 2000). Adoption of IMTs in rural Africa has been much lower than in Asia due to a wide range of factors including lower

population densities, longer distances to markets, low agricultural incomes, limited access to non-agricultural income sources, and the generally weak industrial base, as well as institutional and cultural factors (Ellis 1997). The tendency to sidetrack women in IMT projects is discussed in my second progress report. In some countries (such as Kenya) reduced taxation on bicycles has had a major impact on uptake, whereas in others (such as Zambia) taxation remains a major impediment (Gauthier and Hook 2005). Nonetheless, there is a tendency among government staff at all levels to view IMTs as merely (backward) technology for backward areas. The concept of a 'critical mass' of adopters is often of particular importance in IMT uptake (Starkey 2001:31): this affects maintenance and repair service availability as well as cultural acceptability.

IMT promotion programmes in Africa have often suffered from factors such as provision of inappropriate or poor-quality equipment (as in the case of cycle trailers introduced under the Village Infrastructure Project in Ghana), poor state of paths, high capital cost, lack of suitable finance/credit schemes, lack of consumer appeal and issues around group ownership (I.T. Transport 2003, Porter 2003, Porter and Lyon 2006). From this perspective, the spontaneous development of bicycle-taxi and motorcycle-taxi services in diverse locations across Africa in recent years is particularly instructive. Low cost bicycles and motorcyles imported from China and India appear to have enormous potential for improving access in areas as diverse as congested urban areas and remote off-road areas and, by doing so, providing livelihoods for the very poor (see Guyer 1997, Yunusa 1999, Fasakin 2001, Porter 2002b, on Nigeria; Iga 2002 and Bryceson et al. 2003 on Uganda; Okoth 2005 on Kenya; Lopes 2005 on Angola). Although these services arguably present significant problems in terms of accident rates and environmental pollution, their flexibility gives them considerable advantages over conventional services (Howe and Bryceson 2000).

Regulation and corruption in the transport sector

Although governance and regulation issues are critical to effective performance of the transport sector in Africa, there has been little research in this field. This is a major omission, given the levels of corruption reputed to characterise transport infrastructure provision (from selection of routes to award of road contracts, actual versus contract road construction specifications, etc.) and the corruption and rent-seeking practices widely in evidence across Africa's road transport system (from driving licence issue and bribe-seeking traffic police and vehicle inspection officers, to lorry park and loading restrictions). A few studies give some indication of the scale of the problem. The way transport unions can restrict the development of efficient and inexpensive transport services is well illustrated by Fouracre et al. (1994) for Ghana and Benmaamar (2002) for Uganda. Rizzo (2002) presents a fascinating study of the negative impacts of privatisation and deregulation in the Dar es Salaam transport system, including the rent-seeking practices of the bus owners' association. Gore and Pratten (2002) observe how struggles around control of lorry parks have been exacerbated in Nigeria by the expansion of youth gangs. Roadside inspections by numerous administrative bodies are often a major cause of delays and charges and do little to improve the dangerous, un-roadworthy condition of many vehicles (Nigerian Marketing Network 2005). In oil-rich Nigeria, the sensitive political issue of petroleum shortages created by supplier cartels has only recently been resolved. As Sohail et al (2003:38) emphasise, regulation processes must be carried out in a demonstrably transparent way, 'since regulation combined with corruption can

produce a worse situation than an unregulated market'. This is an area worthy of much greater attention.

Conclusion: future prospects

Although multilateral donors and national governments continued to support expansion and maintenance of the road transport network in Africa in the 1980s and 1990s, bilateral donors became increasingly wary of major capital investments in Africa's transport sector, as issues of inadequate maintenance, inadequate institutions, ingrained corruption and negative consequences for the poor became increasingly and embarrassingly apparent. More recently, however, there seems to have been a reassessment of transport as a component in development assistance. Although the Millennium Goals do not relate directly to transport, transport improvements are clearly essential to their achievement.

The current donor emphasis on pro-poor growth encourages renewed attention to transport issues, given the linkages now established been poverty-reduction and off-farm employment (Bryceson 2002; DFID 2002), the consequent significance of rural-urban interactions and the potential for labour-based road construction, maintenance and transport services themselves to provide employment for the poor. The move to bilateral donor budgetary support to governments similarly supports the renewed emphasis on infrastructure, given African governments' infrastructure priorities. The report of the Commission for Africa (2005) indicates that transport is firmly back on the agenda – indeed, Maxwell (2005:485) suggests that '*rediscovery of infrastructure is probably the biggest single development story of 2005*'. The World Bank Group Action Plan (2005:viii) gives further confirmation, presenting transport as an important component in action to close the infrastructure gap: notably '*rehabilitation of road networks and reform programs to establish independent financing and management mechanisms*'. Roads are emphasised in this document as crucial to agricultural productivity and connecting markets to the poor, with a proposed action to increase investments in rural roads, starting with feeder roads by 20% per annum (ibid 46).

Unfortunately, as the World Bank SSATP (2003:11) notes, it is '*still much easier to explain… the 'contribution' of the transport sector in terms of deliverables, such as numbers of kilometers of road rehabilitated… or the provision of IMTs, than in terms of improved access and mobility, especially related to the needs of particular groups and sectors'*. The diversity of transport needs among different groups of poor people is still not adequately understood (Booth et al. 2000: 46). It is to be hoped that, as these new plans roll forward, they will develop a strong focus on such less tangible issues.

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